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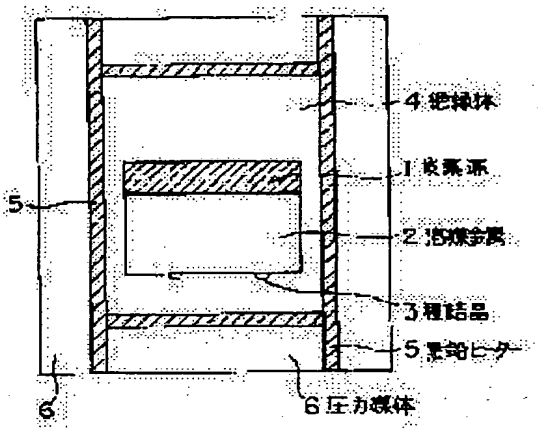
(54) SYNTHETIC DIAMOND AND MANUFACTURE THEREOF

(57)Abstract:
PURPOSE: To manufacture a synthetic diamond which is colorless and transparent and has small deformation, in a method for synthesizing a diamond single crystal by a temperature differential method, wherein the amount of nitrogen getter added to a solvent is adjusted so that the amount of nitrogen and the amount of boron which are taken into crystals during the synthesis become equivalent to each other in terms of atomic number.
CONSTITUTION: In a method for sythesizing a diamond single crystal by a temperature differential method, the amount of nitrogen getter added into a solvent is adjusted so that the amount of nitrogen and the amount of boron which are taken into crystals during the synthesis become equivalent to each other in turns of atomic number. And a source of carbon or the amount of boron added into the solvent is adjusted. For example, as a source of carbon 1, powder of synthetic diamond containing 11ppm of B is used and as a solvent metal 2, Fe, Co containing 2ppm of B are used, and Ti, as nitrogen getter, is added thereto and at the same time Cu is added. As a seed crystal 3, a diamond crystal is used, which crystal is set in a graphite heater 5. A super-high pressure generator is used to grow a diamond on the seed crystal 3.



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